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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/676,303 | 09/30/2003 | Sujit Sharan | 42P16837 | 8178 |

8791 7590 04/05/2007
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| EXAMINER |
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MITCHELL, JAMES M

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| ART UNIT | PAPER NUMBER |
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2813

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|----------------------------------------|------------|---------------|
| 3 MONTHS | 04/05/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/676,303 | Applicant(s) SHARAN ET AL. | |
| | Examiner James M. Mitchell | Art Unit 2813 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-14,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1-3,8,9 and 17 is/are rejected.
- 7) ☒ Claim(s) 4,5,10-13 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response applicant's amendment filed February 28, 2007.

Claim Objections

Claim 7 is objected because of the following informalities: it depends on canceled claim 6 and is likewise canceled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (U.S. 2003/0013233) in combination with Mignardi et al. (U.S. 5,597,767).

5. Shibata discloses:

(cl. 1) a method of forming contacts on (pads; Par. 0028) and scribe lines ("A"; Par. 0028) on a circuit substrate (1);

(cl. 2) wherein each portion of plurality of contact comprises protruding bumps (2).

6. However, Shibata does not appear to show a method of forming a chemically soluble coating on a plurality of exposed contacts on a surface of a circuit substrate and on the surface to a thickness greater than a distance of a surface protrusion of a portion of a plurality of contacts, then scribing through the substrate along scribe areas, wherein scribing comprises using a laser and generating debris on the coating; and after scribing removing the coating by dissolution process to remove the debris, and to expose the plurality of the contacts. Moreover, Shibata does not disclose a thickness of said coating being between 5 to 35 microns.

7. Mignardi (e.g. Fig. 1) teaches a method of forming a chemically soluble coating ("dissolved coating", "wet etch"; Col. 3, Lines 32 & Col. 4, Lines 12-16) on a plurality of exposed contacts (e.g. formed over surface; Col. 3, Lines 32-45) on a surface of a circuit substrate and on the surface to a thickness greater than a distance of a surface protrusion of a portion of a plurality of contacts (e.g. underlying surface protected; Col. 3, Lines 32-33), then scribing through the substrate along scribe areas (step 12; Fig. 1) wherein scribing comprises using a laser (Col. 3, Lines 50-53) and generating debris on the coating (Col. 3, Line 32-33); and after scribing removing the coating by dissolution process to remove the debris (step 13; Fig. 1; Col. 4, Lines 6-13), and to expose the plurality of the contacts (e.g. surface exposed).

8. It would have been obvious to one of ordinary skill in the art to incorporate the scribing process of Mignardi on the substrate surface of Shibata in order to provide scribe lines as required by Shibata ("A").
9. With respect to the coating being 5 to 35 μm , applicant has not disclosed that the limitation is for a particular unobvious purpose, produces an unexpected result or is otherwise critical. As such, the claimed thickness would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).
10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (U.S. 2003/0013233) and Mignardi et al. (U.S. 5,597,767) as applied to claim 1 and further in combination with Franco (U.S. 3,615,951).
11. Neither Shibata nor Mignardi appears to disclose its protective coating consisting of methyl cellulose, polyvinyl alcohol or resin flux.
12. However, Franco utilizes polyvinyl alcohol coating (Col. 2, Lines 48-49).

13. It would have been obvious to one of ordinary skill in the art to form the protective coating of Mignardi with a polyvinyl alcohol in order to provide a photoresist as taught by Franco (Col. 2, Lines 48-49) and as required by Mignardi ("photoresist"; Col. 3, Line 39).

14. Furthermore, the selection polyvinyl as a photoresist material is known in the art at the time the invention was made as evidenced for example by Franco. As such, the claimed selected material would have been obvious to one of ordinary skill in the art, since it has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also M.P.E.P 2144.07.

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (U.S. 2003/0013233) and Mignardi et al. (U.S. 5,597,767) as applied to claim 1 and further in combination with Jacobi (U.S. 4,842,662).

16. Neither Shibata nor Mignardi appears to disclose its protective coating is organic.

17. However, Jacobi utilizes an organic coating (Col. 2, Line 63).

18. It would have been obvious to one of ordinary skill in the art to form the protective coating of Mignardi being organic in order to provide a photoresist as taught by Jacobi (Col. 2, Line 63) and as required by Mignardi ("photoresist"; Col. 3, Line 39).

19. Furthermore, the selection of an organic material for a photoresist is known in the art at the time the invention was made as evidenced for example by Jacobi. As such, the claimed selected material would have been obvious to one of ordinary skill in the art,

since it has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also M.P.E.P 2144.07.

Allowable Subject Matter

20. Claims 14 is allowable, while claims 4, 5, 10-13 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

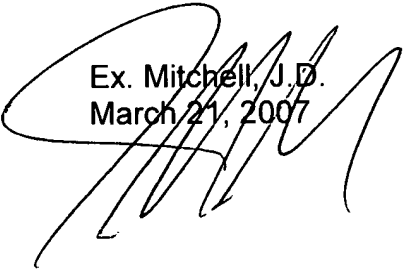
21. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious sawing through the substrate prior to or simultaneous with removing a coating including all the limitations of the independent claims.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ex. Mitchell, J.D.
March 21, 2007